INTERSTATE 680 | CALIFORNIA

HOTLANES

new solutions

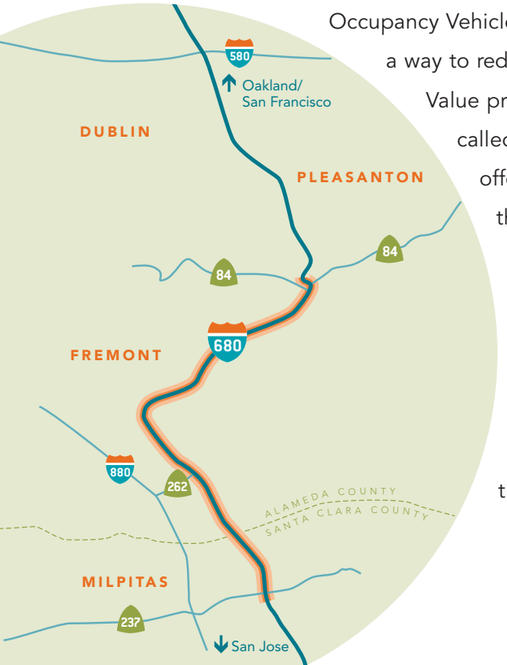
for traffic relief

Employment and population growth—and resulting traffic—are major issues for people who live and work in Alameda County, in the San Francisco Bay Area. The time and productivity lost in traffic has a real impact on the regional economy and our quality of life.

The Alameda County Congestion Management Agency (CMA) is proposing an innovative solution: High Occupancy Toll (HOT) lanes can dramatically change how we commute on our highways.

INTERSTATE 680— A DEMONSTRATION PROJECT

The CMA has been working with the regional Metropolitan Transportation Commission, the California Department of Transportation (Caltrans) and the Federal Highway Administration to explore "value pricing" of High Occupancy Vehicle (HOV) lanes as a way to reduce congestion. Value pricing—also called HOT Lanes—offers motorists the choice of paying a toll to use a faster-moving designated highway lane and reduce their time in traffic.



Interstate 680 between State Routes 84 and 237—commonly called the Sunol Grade—is a key connection between Alameda County and the South Bay/ Silicon Valley. Traffic has significantly increased in recent years, and this 14-mile stretch has become one of the worst commutes in the San Francisco Bay Area.

Caltrans widened southbound I-680 from three to four lanes, creating an interim southbound HOV lane—also called a carpool or "diamond" lane—for vehicles with two or more occupants and for public transit vehicles. The interim lane, which opened in December 2002, will be improved to a standard size HOV lane and opened by early 2007. Northbound I-680 will also be widened from three to four lanes to create an HOV lane.

Studies have shown that combining a HOV lane with a HOT lane provides even more benefits than a carpool-only lane and is physically, operationally and financially feasible on I-680.

Policy makers recently took a bold step in authorizing a three-year HOV/HOT lane demonstration project on I-680. With adequate funding, a HOT feature will be added to the 2+ person HOV southbound lane when it is ready in 2007.

PROVING THE BENEFITS

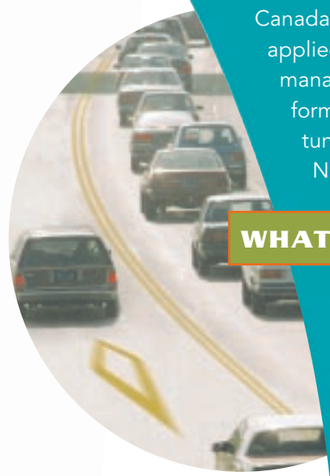
The HOV/HOT system will be tested to determine what features drivers will respond to and will provide the most benefits. The project will be modified as needed, based on actual experience.

Increased speeds, decreased time spent in traffic. In 2007, the average speeds during congested periods in the HOV/HOT lane are predicted to be nearly 30 mph faster than the regular freeway lanes. That could result in about 15 minutes less time spent in traffic per trip. In the future, there will be even more growth and traffic. In 20 years, drivers in the combined HOV/HOT lane could save nearly 25 minutes per trip.

Most efficient use of freeway lanes. A combined HOV/HOT lane can move more vehicles through the corridor than an HOV-only lane because some drivers will pay to avoid delays. When drivers choose to pay

HOT FAQs

High Occupancy Toll (HOT) lanes are a relatively new concept in the United States, although Singapore, Norway, Canada and the United Kingdom have applied value pricing as a way to manage congestion. And there are forms of variable pricing for bridges, tunnels and turnpikes in Florida, New York and New Jersey.



WHAT IS A HOT LANE?

A HOT lane is a designated lane motorists driving alone can use if they pay a fee—allowing them to avoid traffic delays in the regular lanes.

WHAT DOES IT DO?

HOT lanes are usually combined with a High Occupancy Vehicle (HOV) or carpool lane, when there's enough capacity for more vehicles. Toll-paying drivers and toll-free carpool/ vanpool drivers share the lane, increasing the number of cars using HOV/HOT lanes, without reducing the advantages for carpool/ vanpool drivers. This results in fewer vehicles on the mixed lanes, which in turn reduces overall congestion.

THE HOV/HOT COMBO

Motorists driving alone pay a toll to use a faster moving HOV lane, which becomes a combined HOV/HOT lane. Carpool drivers share the combined lane but travel for free. A combined HOV/HOT lane can move more vehicles, more quickly.

The HOV/HOT I-680 project will test how many motorists will use HOT lanes and whether the combination will reduce congestion.

to use the HOV/HOT lane, their vehicles move out of the regular lanes, and reduce congestion overall.

Toll levels can be adjusted up or down to ensure smooth traffic flow and allow the optimum number of vehicles into the HOV/HOT lane. If tolls are set too low, too many motorists may choose to use the HOT lane. Tolls set too high may discourage users and waste freeway capacity.

A travel option for everyone. HOT lanes give all motorists an alternative: Rather than crawl along in traffic in the other lanes, they can pay to use the HOV/HOT lane. Although many drivers may be willing to tolerate delays rather than pay a toll, there are likely to be some occasions when they will want the option to pay to ensure a fast, reliable trip. For those users on those occasions, saving time is worth spending money.

Positive revenues. A combined HOV/HOT lane can generate enough net revenue to cover more than the cost of toll collection operations. Even better, net revenue is expected to increase over time. The cumulative net income over 20 years for HOT lanes in both southbound and northbound directions is estimated to be between $83 and $142 million under the current two-person carpool policy.

Money for other improvements. Money generated from a combined HOV/HOT lane could be used for bus service or other transit services, highway maintenance, freeway improvements on the I-680 corridor or on transportation improvements that benefit the corridor.

HOT LANES COOL CONGESTION

- Shorter commute times
- Reduced costs for moving goods and people
- Improved air quality
- Reduced gas consumption
- Increased revenues to pay for transportation improvements
- Improved quality of life

DEFINING THE PROJECT

The project will use electronic toll collection. The toll tag or transponder in the driver's vehicle will be the same as the Fastrak system now used on San Francisco Bay Area bridges to collect tolls electronically. Cars don't need to stop and no toll booths are needed. Electronic collection also offers more flexibility in adjusting tolls.

1 Lane Delineation. The HOV/HOT lane will be delineated from the three other lanes with striping, which is less expensive and more flexible than physical barriers. If the HOT lane project doesn't work as well as expected, it can be modified easily and inexpensively by adjusting the striping.

2 Tolls and Enforcement. The highest peak-hour tolls will likely range from 22 to 38 cents per mile. Tolls can be adjusted to keep pace with traffic conditions.

3 Access. Different locations for entering and leaving the HOV/HOT lane can be tested during the demonstration project—and easily changed through new signage and striping. A number of locations for intermediate access into and out of the lane are still being considered, such as access near the midpoint of the 14-mile segment (near the Route 262/Mission Boulevard interchange on I-680.)

HOT FAQs

HOW DOES IT WORK?

Motorists enter the lane at specific locations, delineated with a buffer such as striping. Once motorists enter the lane, they must remain in it until a designated exit.

WHO CAN USE IT?

Any car or light-duty truck can use a HOT lane—regardless of the number of passengers—if the driver is willing to pay a toll to use the HOV/HOT lane. Carpools always travel for free.

WHEN IS IT USED?

A HOT lane is available to paying customers at the times when the HOV lane is in operation.

HOW IS THE TOLL DETERMINED?

The toll to use a HOT lane can vary by time of day, demand and traffic conditions. Carpool/vanpools and public transit vehicles always travel for free.

HOW ARE TOLLS COLLECTED?

Tolls are collected through the FasTrak system. An electronic reader identifies the vehicle from an in-vehicle transponder and deducts the toll amount from a prepaid account. The system allows pricing to change according to how heavy the traffic is. No toll booths are needed.

HOW IS IT ENFORCED?

Legal use of HOT lanes is enforced through highway patrol and videocamera surveillance.

TACKLING THE CHALLENGES

A demonstration project is an experiment and, as with most experiments, challenges can be expected. CMA has defined and will address several challenges.

Access constraints. HOV/HOT lanes must limit where vehicles can enter and leave the lane so tolls can be collected easily and legal use of lanes enforced. Some drivers may want greater flexibility in choosing when to enter and leave the lane. Providing intermediate access along the freeway can minimize this challenge.

Clogged HOV Lanes. If the lane becomes overly congested because of heavy use by two-person carpools, the minimum requirements for a carpool can be increased from two to three persons.

Toll collection and enforcement. To be successful, the HOV/HOT lane must be enforced and tolls successfully collected. Strong enforcement will be accomplished using a combination of electronic payment, video surveillance and enhanced highway patrols.

A new concept. The HOV/HOT lane choice is new to drivers and decision makers in the San Francisco Bay Area. A public education campaign will help people become familiar with how it operates and the benefits of using it.

Institutional change. A state law must be passed to allow charging a toll on any public road. Success will also require interagency cooperation on legal, financial and operational issues such as management, maintenance and the use of toll revenues.

Reduced Ridesharing. HOT lanes may result in fewer carpools because some drivers—who would otherwise make the effort to form carpools—will pay the toll instead. Increasing the toll levels may provide an incentive to remain with a carpool.

Equity concerns. The question of equity is frequently raised in pricing discussions: Do those with lower incomes benefit? Research on existing HOT lanes shows that higher-income individuals do use HOT lanes somewhat more frequently. But, lower-income drivers use them on those occasions when being late is costly or intolerable to them. The research also shows that people across all income levels find value in the *option* to pay a fee and be assured of reliable time savings.

A MODEL FOR OTHER HOT LANES IN THE BAY AREA?

HOT lanes have proved successful in combination with HOV lanes in California on State Route 91 in Orange County and Interstate-15 in San Diego, as well as on I-10 in Houston, Texas. Polls of HOT lane users in Southern California show increased support for HOT lanes after drivers experience them and the benefits they offer. A successful I-680 project can become a prototype for other congested corridors throughout the Bay Area and beyond.

People across all income levels find value in having the *option* to pay a toll and be assured reliable time savings—because sometimes the cost of being late is not acceptable.

MEASURING SUCCESS

The I-680 demonstration project will provide answers to help gauge the value of using HOT/HOV lanes to reduce congestion in Alameda County:

- Will travelers perceive it as a worthwhile and reliable travel option?
- How many drivers are willing to pay to avoid delays?
- How much are they willing to pay?
- How many people will be able to move through the corridor?
- How much will travel speeds increase and travel time decrease?
- Can tolls be adjusted up and down to ensure smooth flow of traffic?
- Will enforcement be successful?
- Will it be perceived as fair?
- What organizational structure can best handle legal, financial and operational issues?
- How much net revenue will be generated?

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